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GREEN Less Heat, Less Power Consumption

STABLE Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

Z690D4U-2L2T
W680D4U-2L2T
W680D4U-1L
Z690D4U
W680D4U

User Manual

English



Version 1.30

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The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.

"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



ASRock Rack INC. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related UKCA Directives. Full text of UKCA declaration of conformity is available at: <http://www.asrockrack.com>



ASRock Rack INC. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Directives. Full text of EU declaration of conformity is available at: <http://www.asrockrack.com>

ASRock Rack follows the green design concept to design and manufacture our products, and makes sure that each stage of the product life cycle of ASRock Rack product is in line with global environmental regulations. In addition, ASRock Rack disclose the relevant information based on regulation requirements.

Please refer to <https://www.asrockrack.com/general/about.asp?cat=Responsibility> for information disclosure based on regulation requirements ASRock Rack is complied with.



DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

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Chapter 1 Introduction

Thank you for purchasing ASRock Rack **Z690D4U-2L2T / Z690D4U / W680D4U-2L2T / W680D4U-1L / W680D4U** motherboard, a reliable motherboard produced under ASRock Rack's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock Rack's commitment to quality and endurance.



Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock Rack website without further notice. Find the latest memory and CPU support lists on ASRock Rack website as well. ASRock Rack's Website: www.ASRockRack.com

*Please visit the website for specific information and technical support:
<http://www.asrockrack.com/support/>*

1.1 Package Contents

- ASRock Rack Z690D4U-2L2T / Z690D4U / W680D4U-2L2T / W680D4U-1L / W680D4U motherboard (Micro-ATX form factor: 244 mm x 244 mm, PCB: 1.70 mm)
- Quick installation guide
- 1 SATA3 cable (60 cm)
- 1 I/O shield
- 1 Screw for M.2 socket



If any items are missing or appear damaged, contact the authorized dealer.

1.2 Specifications

Z690D4U-2L2T / W680D4U-2L2T	
Physical Status	
Form Factor	Micro-ATX
Dimension	244 mm x244 mm
PCB	1.70 mm
Processor System	
CPU	<u>Z690D4U-2L2T:</u> Supports Intel® Core™ 14th Gen, 13th & 12th Gen Intel® Core™, Pentium® and Celeron® series processors <u>W680D4U-2L2T:</u> Supports Intel® Core™ 14th Gen, 13th & 12th Gen Intel® Core™ series processors
Socket	Single Socket LGA 1700
Thermal Design Power	150W
Chipset	<u>Z690D4U-2L2T:</u> Intel® Z690 <u>W680D4U-2L2T:</u> Intel® W680
System Memory	
Supported DIMM Quantity	4 DIMM slots (2DPC)
Supported Type	<u>Z690D4U-2L2T:</u> Supports DDR5 288-pin non-ECC UDIMM <u>W680D4U-2L2T:</u> Supports DDR5 288-pin ECC / non-ECC UDIMM
Max. Capacity per DIMM	48 GB on Intel® Core™ 14th Gen, 13th Gen Intel® Core™ processors 32 GB on 12th Gen Intel® Core™ processors
Max. Frequency	4400 MHz (2DPC-1DIMM) / 4000 MHz (2DPC-2DIMM 1R) / 3600 MHz (2DPC-2DIMM 2R)
Voltage	1.1V
<i>Note: Memory support is to be validated.</i>	
Expansion Slot (SLOT7 close to CPU)	
PCIe7	SLOT7: PCIe 3.0 x1 [PCH]
PCIe6	SLOT6: PCIe 4.0 x16 [CPU]
PCIe4	SLOT4: PCIe 4.0 x8 [CPU]
<i>Note: SLOT6 auto-switch to PCIe 4.0 x8 when SLOT4 occupied.</i>	
Other PCIe Expansion Connectors	
M.2	1 M-key (PCIe3.0x4) [PCH]: Supports 2280 / 2260 / 2242 / 2230 form factor

OCuLink	1 OcuLink (PCIe 4.0 x4) [CPU] 1 OcuLink (PCIe 4.0 x4 or 4 SATA 6 Gb/s) [PCH] 2 OcuLink (PCIe 4.0 x4) [PCH]
<i>Note: M.2 share lanes with SLOT5, SLOT5 support possible by depopulating M.2 and other BOM change.</i>	
SATA / SAS Storage	
PCH Built-in Storage	Intel Z690 (8 SATA 6 Gb/s: RAID 0/1/5/10): 4 SATA 7-pin, 1 OcuLink for 4 SATA Intel W680 (8 SATA 6 Gb/s: RAID 0/1/5/10): 4 SATA 7-pin, 1 OcuLink for 4 SATA
Ethernet	
Additional GbE Controller	2 RJ45 (10 GbE) by Intel® X710 2 RJ45 (1 GbE) by Intel® i210
Management	
BMC Controller	ASPEED AST2600: iKVM, vMedia support
Dedicated IPMI LAN	1 RJ45 dedicated IPMI LAN port by Realtek RTL8211F
Graphics	
Controller	ASPEED AST2600: 1 DB15 (VGA) Intel® integrated processor graphics: 1 HDMI, 1 DisplayPort
Rear I/O	
UID Button / LED	1 UID button w/ LED
Video Output	1 DB15 (VGA), 1 HDMI, 1 DisplayPort
Serial Port	1 DB9 (COM)
USB Port	2 Type A (USB 3.2 Gen1)
LAN Port	2 RJ45(10 GbE), 2 RJ45(1 GbE), 1 dedicated IPMI
Internal Connectors/Headers	
Power Connector	1 (24-pin, ATX main power), 2 (8-pin, ATX 12V)
Auxiliary Panel Header	1 (18-pin): chassis intrusion, system fault LED, LAN activity LEDs, locate, SMBus
System Panel	1 (9-pin): power switch, reset switch, system power LED, HDD activity LED
VGA header	1
Speaker Header	1 (4-pin)
Fan Header	7 (4-pin)
Thermal Sensor Header	1
TPM Header	1 (13-pin, SPI)

SGPIO Header	1
SMBus Header	1
PMBus Header	1
IPMB Header	1
Clear CMOS	1 (contact pads)
USB Header	1 (19-pin, 2 USB 3.2 Gen1) 1 (9-pin, 2 USB 2.0)
NMI Header	1
Others	1 Buzzer
LED Indicators	
Standby PWR LED	1 (5VSB)
80 Debug Port LED	1
Fan Fail LED	7
BMC Heartbeat LED	1
System BIOS	
Type	AMI 256 Mb SPI Flash ROM
Features	Plug and Play (PnP), ACPI 6.4 (and above) compliance wake-up events, SMBIOS 3.6.0 and above, ASRock Rack Instant Flash
Hardware Monitor	
Temperature	CPU, MB, card side, TR temperature sensing
Fan	CPU / Rear / Front fan tachometer CPU quiet fan (allow chassis fan speed auto-adjust by CPU temperature) CPU / Rear / Front fan multi-speed control
Voltage	+12V, +5V, +3.3V, CPU Vcore, DRAM, V1.0M,+BAT, 3VSB, 5VSB
Support OS	
OS	Microsoft® Windows® - Windows 10 (64 bit) - Windows 11 (64 bit) Linux® - RedHat Enterprise Linux Server 8.5 (64 bit) - CentOS 8.5 (64 bit) - SUSE SLES 15.2 (64 bit) - Ubuntu 21.10 (64 bit) <i>* Supports UEFI BOOT only.</i> <i>* Please refer to the website for the latest OS support list.</i>

Environment	
Temperature	Operating temperature: 10°C ~ 35°C
	Non-operating temperature: -40°C ~ 70°C
Humidity	Non-operating humidity: 20% ~ 90% (non-condensing)

NOTE: Please refer to the website for the latest specifications.



This motherboard supports Wake from on Board LAN. To use this function, please make sure that the "Wake on Magic Packet from power off state" is enabled in Device Manager > Intel® Ethernet Connection > Power Management. And the "PCI Devices Power On" is enabled in UEFI SETUP UTILITY > Advanced > ACPI Configuration. After that, onboard LAN1&2 can wake up S5 under OS.



If installing Intel® LAN utility or Marvell SATA utility, this motherboard may fail Windows® Hardware Quality Lab (WHQL) certification tests. If installing the drivers only, it will pass the WHQL tests.

Z690D4U / W680D4U	
Physical Status	
Form Factor	mATX
Dimension	9.6 in x 9.6 in (244 mm x244 mm)
PCB	1.70 mm
Processor System	
CPU	<u>Z690D4U:</u> - Supports Intel® Core™ 14th Gen, 13th & 12th Gen Intel® Core™, Pentium® and Celeron® series processors <u>W680D4U:</u> - Supports Intel® Core™ 14th Gen, 13th & 12th Gen Intel® Core™ series processors
Socket	Single Socket LGA 1700
Thermal Design Power	150W
Chipset	<u>Z690D4U:</u> Intel® Z690 <u>W680D4U:</u> Intel® W680
System Memory	
Supported DIMM Quantity	4 DIMM slots (2DPC)
Supported Type	<u>Z690D4U:</u> - Supports DDR5 288-pin non-ECC UDIMM <u>W680D4U:</u> - Supports DDR5 288-pin ECC / non-ECC UDIMM
Max. Capacity per DIMM	48 GB on Intel® Core™ 14th Gen, 13th Gen Intel® Core™ processors 32 GB on 12th Gen Intel® Core™ processors
Max. Frequency	4400 MHz (2DPC-1DIMM) / 4000 MHz (2DPC-2DIMM 1R) / 3600 MHz (2DPC-2DIMM 2R)
Voltage	1.1V
Note: Memory support is to be validated.	
Expansion Slot (SLOT7 close to CPU)	
PCIE7	SLOT7: PCIe 3.0 x1 [PCH]
PCIE6	SLOT6: PCIe 4.0 x16 [CPU]
PCIE4	SLOT4: PCIe 4.0 x8 [CPU]
Note: SLOT6 auto-switch to PCIe 4.0 x8 when SLOT4 occupied.	
Other PCIe Expansion Connectors	
M.2	1 M-key (PCIe 3.0x4) [PCH]: Support 2280 / 2260 / 2242 / 2230 form factor
OCuLink	1 OcuLink (PCIe 4.0 x4) [CPU] 1 OcuLink (PCIe 4.0 x4 or 4 SATA 6 Gb/s) [PCH] 2 OcuLink (PCIe 4.0 x4) [PCH]
Note: M.2 share lanes with SLOTS, SLOTS support possible by depopulating M.2 and other BOM change.	

SATA / SAS Storage	
PCH Built-in Storage	Intel Z690 (8 SATA 6 Gb/s: RAID 0/1/5/10): 4 SATA 7-pin, 1 OCuLink Intel W680 (8 SATA 6Gb/s: RAID 0/1/5/10): 4 SATA 7-pin, 1 OCuLink
Ethernet	
Additional Ethernet Controller	2 RJ45 (1 GbE) by Intel® i210
Management	
BMC Controller	ASPEED AST2600: iKVM, vMedia support
Dedicated IPMI LAN	1 RJ45 dedicated IPMI LAN port by Realtek RTL8211F
Graphics	
Controller	ASPEED AST2600: 1 DB15 (VGA) Intel® integrated processor graphics: 1 HDMI, 1 DisplayPort
Rear I/O	
UID Button / LED	1 UID button w/ LED
Video Output	1 DB15 (VGA), 1 HDMI, 1 DisplayPort
Serial Port	1 DB9 (COM)
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Thermal Sensor Header	1
TPM Header	1 (13-pin, SPI)
SGPIO Header	1
SMBus Header	1
PMBus Header	1
IPMB Header	1

Clear CMOS	1 (contact pads)
USB 3.2 (Gen1) Header	1 (19-pin, 2 USB 3.2 Gen1)
USB 2.0 Header	1 (9-pin, 2 USB 2.0)
NMI Header	1
Others	1 Buzzer
LED Indicators	
Standby PWR LED	1 (5VSB)
80 Debug Port LED	1
Fan Fail LED	7
BMC Heartbeat LED	1
System BIOS	
Type	AMI 256 Mb SPI Flash ROM
Features	Plug and Play(PnP), ACPI 6.4 (and above) compliance wake-up events, SMBIOS 3.6.0 and above, ASRock Rack Instant Flash
Hardware Monitor	
Temperature	CPU, MB, card side, TR temperature sensing
Fan	CPU / Rear / Front fan tachometer CPU quiet fan (allow chassis fan speed auto-adjust by CPU temperature) CPU / Rear / Front fan multi-speed control
Voltage	+12V, +5V, +3.3V, CPU Vcore, DRAM, V1.0M, +BAT, 3VSB, 5VSB
Support OS	
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Thermal Design Power	150W
Chipset	Intel® W680
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Supported DIMM Quantity	4 DIMM slots (2DPC)
Supported Type	Supports DDR5 288-pin ECC / non-ECC UDIMM
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Ethernet	
Additional Ethernet Controller	1 RJ45 (1 GbE) by Intel® i210
Graphics	
Controller	Intel® integrated processor graphics: 1 HDMI, 1 DisplayPort

Rear I/O	
Video Output	1 DB15 (VGA) (No Function), 1 HDMI, 1 DisplayPort
Serial Port	1 DB9 (COM)
USB Port	2 Type A (USB 3.2 Gen1)
LAN Port	1 RJ45(1 GbE)
Internal Connector	
Power Connector	1 (24-pin, ATX main power), 2 (8-pin, ATX 12V)
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Hardware Monitor	
Temperature	CPU, MB, card side, TR temperature sensing
Fan	CPU / Rear / Front fan tachometer CPU quiet fan (allow chassis fan speed auto-adjust by CPU temperature) CPU / Rear / Front fan multi-speed control

Voltage	+12V, +5V, +3.3V, CPU Vcore, DRAM, V1.0M, +BAT, 3VSB, 5VSB
Support OS	
OS	Microsoft® Windows® - Windows 10 (64 bit) - Windows 11 (64 bit) Linux® - RedHat Enterprise Linux Server 8.5 (64 bit) - CentOS 8.5 (64 bit) - SUSE SLES 15.2 (64 bit) - Ubuntu 21.10 (64 bit) <i>* Supports UEFI BOOT only.</i> <i>* Please refer to the website for the latest OS support list.</i>
Environment	
Temperature	Operating temperature: 10°C ~ 35°C Non-operating temperature: -40°C ~ 70°C
Humidity	Non-operating humidity: 20% ~ 90% (non-condensing)

NOTE: Please refer to the website for the latest specifications.



This motherboard supports Wake from on Board LAN. To use this function, please make sure that the "Wake on Magic Packet from power off state" is enabled in Device Manager > Intel® Ethernet Connection > Power Management. And the "PCI Devices Power On" is enabled in UEFI SETUP UTILITY > Advanced > ACPI Configuration. After that, onboard LAN1&2 can wake up S5 under OS.



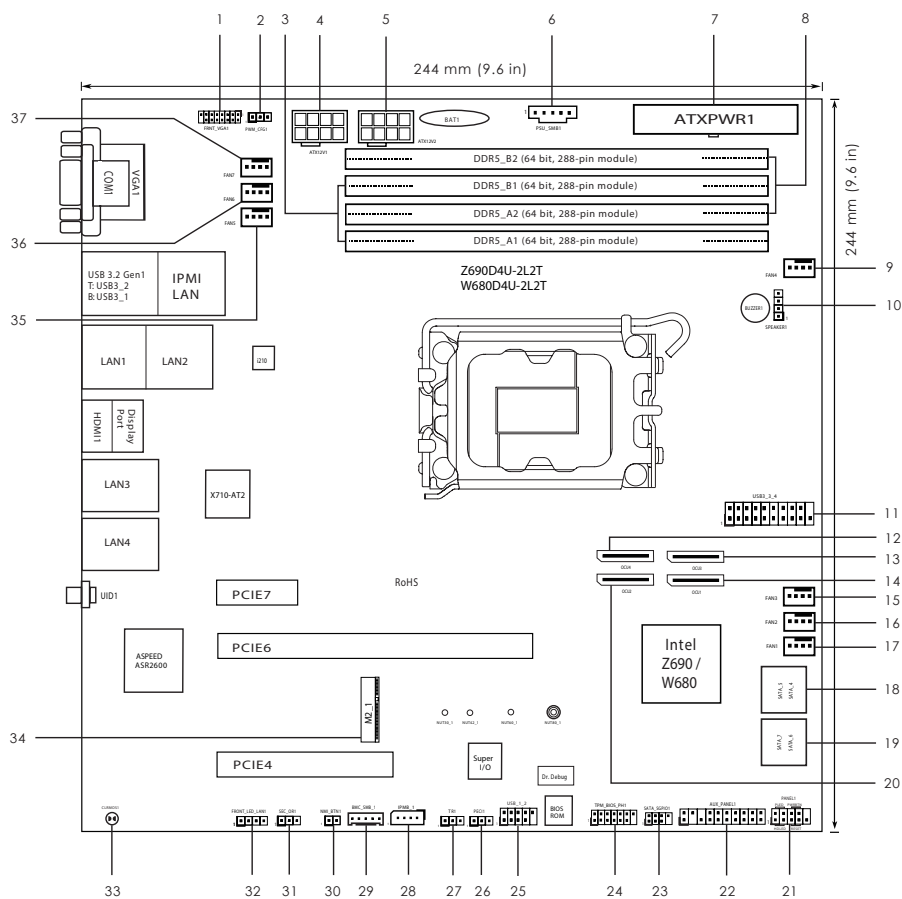
If installing Intel® LAN utility or Marvell SATA utility, this motherboard may fail Windows® Hardware Quality Lab (WHQL) certification tests. If installing the drivers only, it will pass the WHQL tests.

1.3 Unique Features

ASRock Rack Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows user to update system BIOS without entering operating systems first like MS-DOS or Windows*. With this utility, press the <F6> key during the POST or the <F2> key to enter into the BIOS setup menu to access ASRock Rack Instant Flash. Just launch this tool and save the new BIOS file to the USB flash drive, floppy disk or hard drive, then update the BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system.

1.4 Motherboard Layout

Z690D4U-2L2T / W680D4U-2L2T



No.	Description
1	Front VGA Header (FRNT_VGA1)
2	PWM Configuration Header (PWM_CFG1)
3	2 x 288-pin DDR5 DIMM Slots (DDR5_A1, DDR5_B1)
4	ATX 12V Power Connector (ATX12V1)
5	ATX 12V Power Connector (ATX12V2)
6	PSU SMBus Header (PSU_SMB1)
7	ATX Power Connector (ATXPWR1)
8	2 x 288-pin DDR5 DIMM Slots (DDR5_A2, DDR5_B2)
9	Chassis Fan Header (FAN4)
10	Chassis Speaker Header (SPEAKER1)
11	USB 3.2 Gen1 Header (USB3_3_4)
12	OCuLink x4 Connector (OCU4)
13	OCuLink x4 Connector (OCU3)
14	OCuLink x4 Connector (OCU1)
15	Chassis Fan Header (FAN3)
16	Chassis Fan Header (FAN2)
17	Chassis Fan Header (FAN1)
18	SATA3 Connectors (SATA3_5)(Upper), (SATA3_4)(Lower)
19	SATA3 Connectors (SATA3_7)(Upper), (SATA3_6)(Lower)
20	OCuLink x4 Connector (OCU2)
21	System Panel Header (PANEL1)
22	Auxiliary Panel Header (AUX_PANEL1)
23	SATA SGPIO Connector (SATA_SGPIO1)
24	SPI TPM Header (TPM_BIOS_PH1)
25	USB 2.0 Header (USB_1_2)
26	CPU PECI Mode Jumper (PECI1)
27	Thermal Sensor Header (TR1)
28	Intelligent Platform Management Bus Header (IPMB_1)
29	BMC SMBus Header (BMC_SMB_1)
30	Non Maskable Interrupt Button (NMI_BTN1)
31	Security Override Jumper (SEC_OR1)
32	Front LAN LED Connector (FRONT_LED_LAN1)
33	Clear CMOS Pad (CLRMOS1)
34	M.2 Socket (M2_1) (Type 2230 / 2242 / 2260 / 2280)

No.	Description
35	Chassis Fan Header (FAN5)
36	Chassis Fan Header (FAN6)
37	Chassis Fan Header (FAN7)

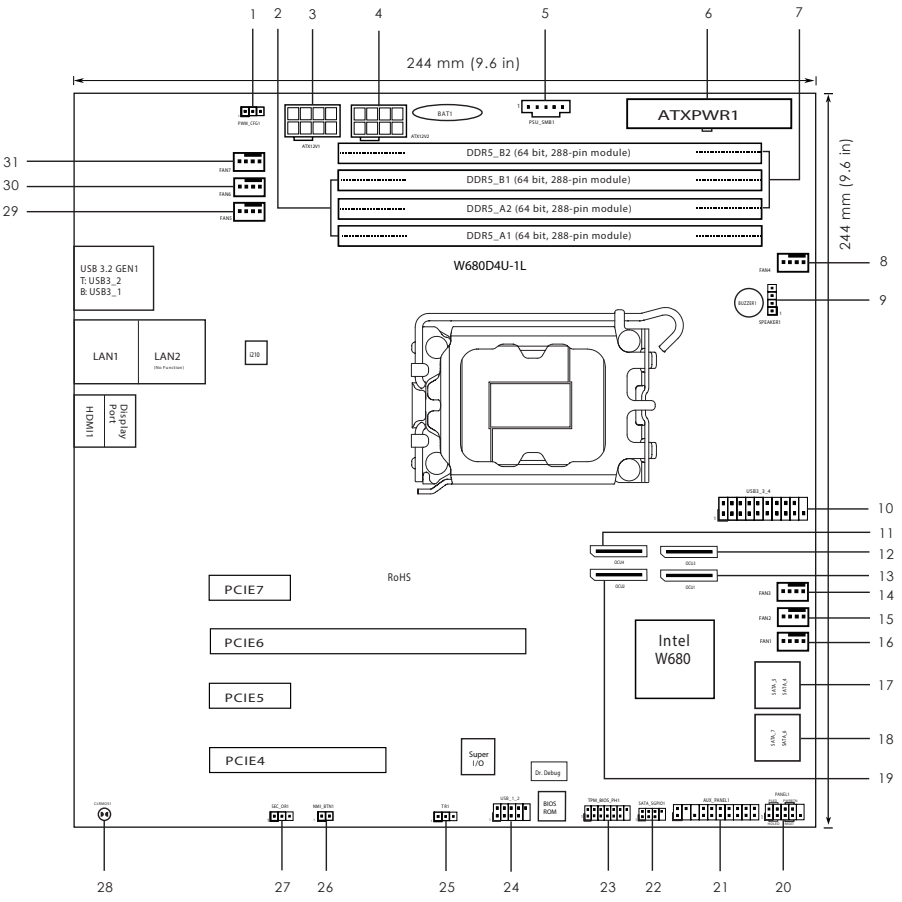
**For DIMM installation and configuration instructions, please see p.32 (Installing the Memory Modules (DIMM)) for more details.*

No.	Description
1	Front VGA Header (FRNT_VGA1)
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9	Chassis Fan Header (FAN4)
10	Chassis Speaker Header (SPEAKER1)
11	USB 3.2 Gen1 Header (USB3_3_4)
12	OCuLink x4 Connector (OCU4)
13	OCuLink x4 Connector (OCU3)
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31	Security Override Jumper (SEC_OR1)
32	Clear CMOS Pad (CLRMO1)
33	M.2 Socket (M2_1) (Type 2230 / 2242 / 2260 / 2280)
34	Chassis Fan Header (FAN5)

No.	Description
35	Chassis Fan Header (FAN6)
36	Chassis Fan Header (FAN7)

**For DIMM installation and configuration instructions, please see p.32 (Installing the Memory Modules (DIMM)) for more details.*

W680D4U-1L

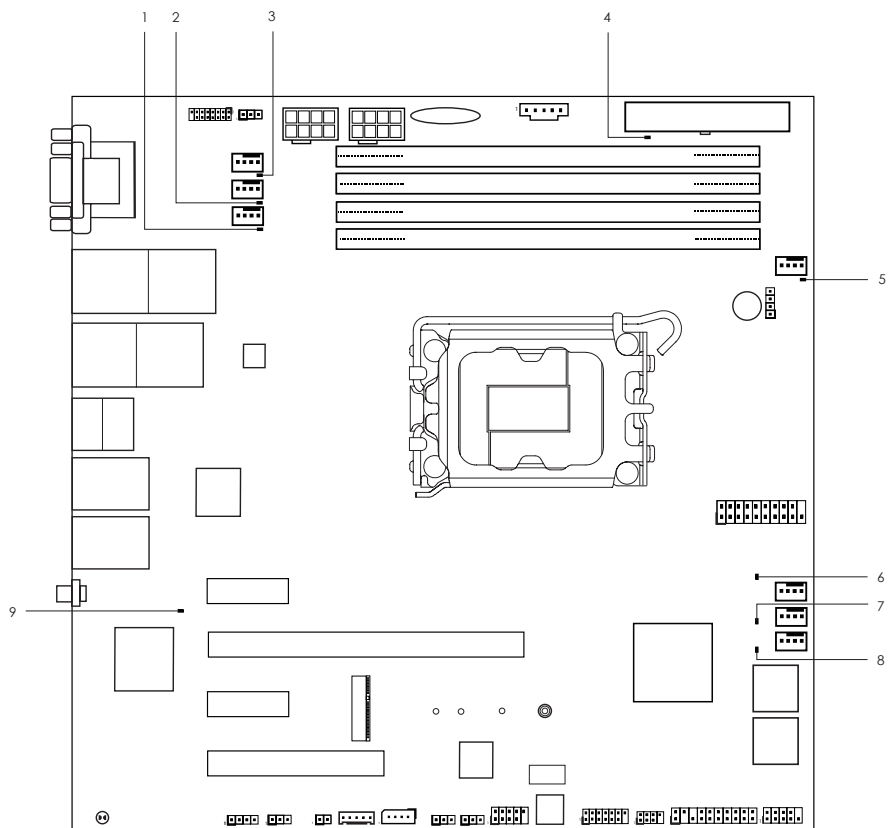


No.	Description
1	PWM Configuration Header (PWM_CFG1)
2	2 x 288-pin DDR5 DIMM Slots (DDR5_A1, DDR5_B1)
3	ATX 12V Power Connector (ATX12V1)
4	ATX 12V Power Connector (ATX12V2)
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6	ATX Power Connector (ATXPWR1)
7	2 x 288-pin DDR5 DIMM Slots (DDR5_A2, DDR5_B2)
8	Chassis Fan Header (FAN4)
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10	USB 3.2 Gen1 Header (USB3_3_4)
11	OCuLink x4 Connector (OCU4)
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28	Clear CMOS Pad (CLRMOS1)
29	Chassis Fan Header (FAN5)
30	Chassis Fan Header (FAN6)
31	Chassis Fan Header (FAN7)

**For DIMM installation and configuration instructions, please see p.32 (Installing the Memory Modules (DIMM)) for more details.*

1.5 Onboard LED Indicators

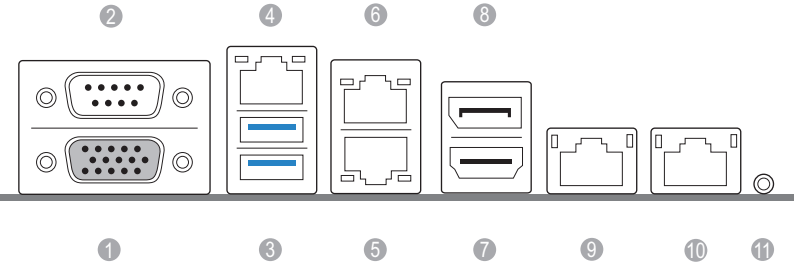
The layout below is only for Z690D4U-2L2T reference, all Z690D4U and W680D4U series LED locations are the same.



No.	Item	Status	Description
1	FAN5_LED1	Red	FAN5 failed
2	FAN6_LED1	Red	FAN6 failed
3	FAN7_LED1	Red	FAN7 failed
4	SB_PWR1	Green	STB PWR ready
5	FAN4_LED1	Red	FAN4 failed
6	FAN3_LED1	Red	FAN3 failed
7	FAN2_LED1	Red	FAN2 failed
8	FAN1_LED1	Red	FAN1 failed
9	BMC_LED1	Blinking four times and then off	Start initialization after AC power-on or BMC reset
		Blinking at 1Hz	BMC ready
		Steady on	Error
		Steady off	(The actual behavior depends on the state at the time of failure.)
		Other frequency	

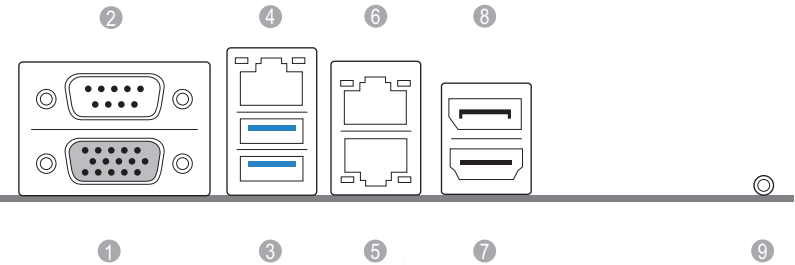
1.6 I/O Panel

Z690D4U-2L2T / W680D4U-2L2T



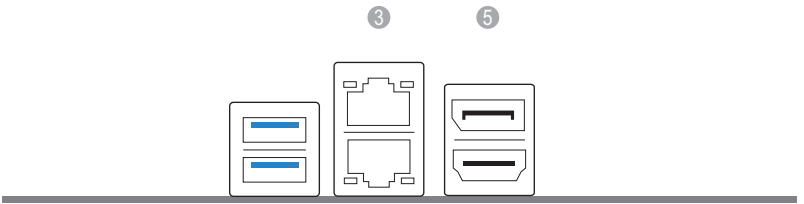
No.	Description	No.	Description
1	VGA Port (VGA1)	7	HDMI Port (1.4b)
2	Serial Port (COM1)	8	Display Port (1.4a)
3	USB 3.2 Gen1 Ports (USB3_1_2)	9	10G LAN RJ-45 Port (LAN3)**
4	LAN RJ-45 Port (IPMI_LAN)*	10	10G LAN RJ-45 Port (LAN4)**
5	1G LAN RJ-45 Port (LAN1, shared NIC)***	11	UID Switch (UID1)
6	1G LAN RJ-45 Port (LAN2)***		

Z690D4U/ W680D4U



No.	Description	No.	Description
1	VGA Port (VGA1)	6	1G LAN RJ-45 Port (LAN2)**
2	Serial Port (COM1)	7	HDMI Port (1.4b)
3	USB 3.2 Gen1 Ports (USB3_1_2)	8	Display Port (1.4a)
4	LAN RJ-45 Port (IPMI_LAN)*	9	UID Switch (UID1)
5	1G LAN RJ-45 Port (LAN1, shared NIC)***		

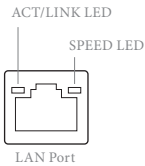
W680D4U-1L



No.	Description	No.	Description
1	USB 3.2 Gen1 Ports (USB3_1_2)	4	HDMI Port (1.4b)
2	1G LAN RJ-45 Port (LAN1, shared NIC)***	5	Display Port (1.4a)
3	1G LAN RJ-45 Port (LAN2)*** (No function)		

LAN Port LED Indications

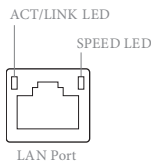
*There are two LEDs on the LAN port specified for link activity and speed. Please refer to the table below for the LAN port LED indications.



IPMI LAN Port LED Indications

Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No link	Off	10 Mbps connection or no link
Blinking Yellow	Data activity	Yellow	100 Mbps connection
On	Link	Green	1 Gbps connection

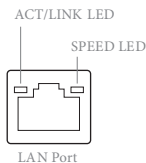
**There are two LEDs on the LAN port specified for link activity and speed. Please refer to the table below for the LAN port LED indications.



10G LAN Port LED Indications

Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No link	Off	100 Mbps connection or no link
Blinking Green	Data activity	Yellow	1 Gbps connection
On	Link	Green	10 Gbps connection

***There are two LEDs on the LAN port specified for link activity and speed. Please refer to the table below for the LAN port LED indications.



1G LAN Port LED Indications

Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No link	Off	10 Mbps connection or no link
Blinking Orange	Data activity	Yellow	100 Mbps connection
On	Link	Green	1 Gbps connection



Chapter 2 Installation

This is a Micro-ATX form factor (244 mm x 244 mm, PCB: 1.70 mm) motherboard. Before installing the motherboard, study the configuration of the chassis to ensure that the motherboard fits into it.



1. Ensure the motherboard battery is installed before unplugging the power cord or installing/removing the motherboard.
2. Before installing or removing any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and / or components.

2.1 Screw Holes

Place screws into the holes indicated by circles to secure the motherboard to the chassis.



Do not over-tighten the screws! Doing so may damage the motherboard.

2.2 Pre-installation Precautions

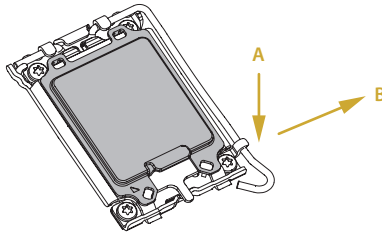
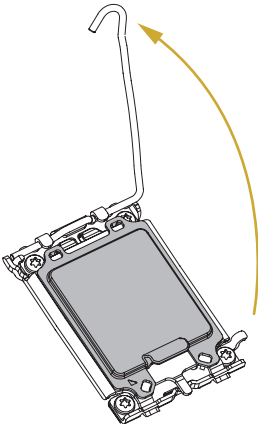
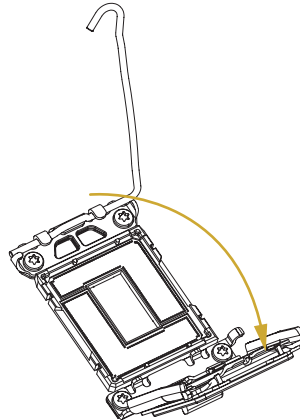
Take note of the following precautions before installing motherboard components or change any motherboard settings.

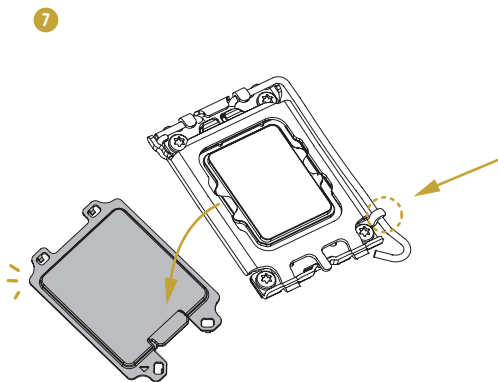
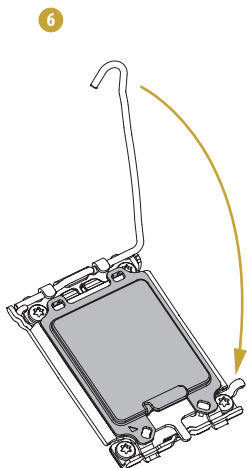
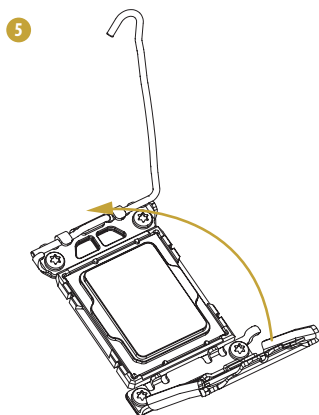
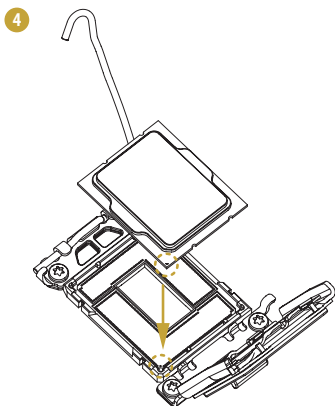
1. Unplug the power cord from the wall socket before touching any components.
2. To avoid damaging the motherboard's components due to static electricity, NEVER place the motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before handling the components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever uninstall any component, place it on a grounded anti-static pad or in the bag that comes with the component.
5. When placing screws into the screw holes to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

2.3 Installing the CPU



1. Before inserting the 1700-Pin CPU into the socket, please check if the **PnP cap** is on the socket, if the CPU surface is unclean, or if there are any **bent pins** in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.
2. Unplug all power cables before installing the CPU.

1**2****3**

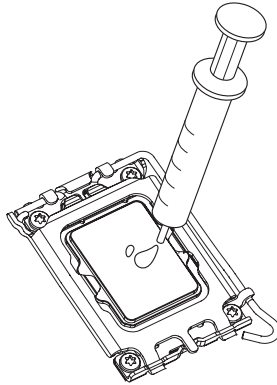


Please save and replace the cover if the processor is removed. The cover must be placed if wishing to return the motherboard for after service.

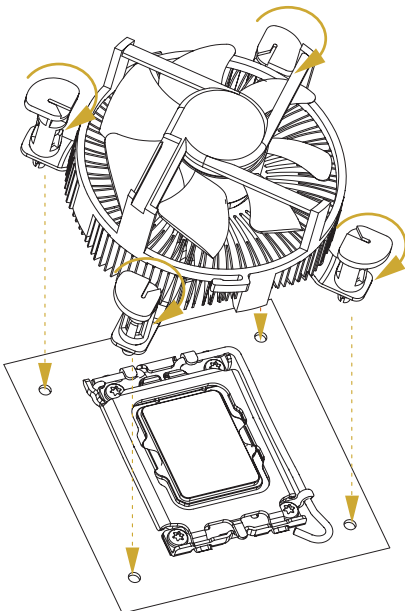
2.4 Installing the CPU Fan and Heatsink



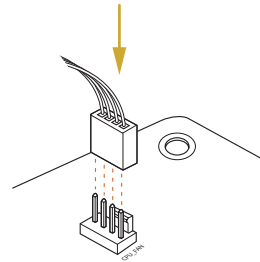
PCB thickness is crucial when using the cooling device. Please select the compatible CPU fan(s) or heatsink(s).



1



2



2.5 Installing the Memory Modules (DIMM)

This motherboard provides four 288-pin DDR5 (Double Data Rate 5) DIMM slots, and supports Dual Channel Memory Technology.



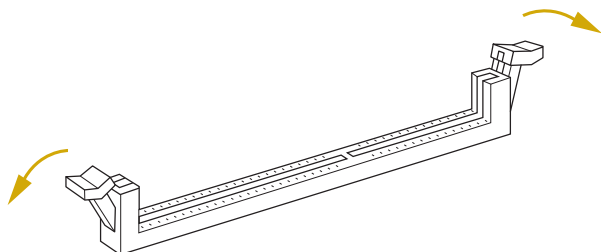
1. For dual channel configuration, it always needs to install identical (the same brand, speed, size and chip-type) DDR5 DIMM pairs.
2. It is unable to activate Dual Channel Memory Technology with only one or three memory module installed.
3. It is not allowed to install a DDR, DDR2, DDR3 or DDR4 memory module into a DDR5 slot; otherwise, this motherboard and DIMM may be damaged.

Dual Channel Memory Configuration

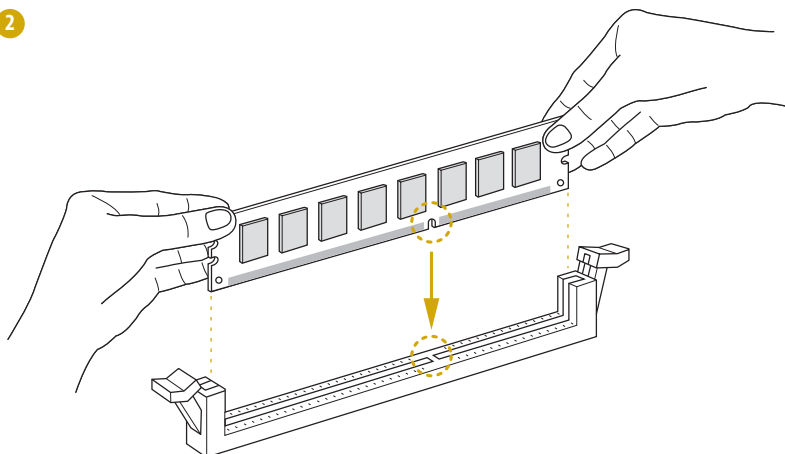
Priority	DDR5_A1	DDR5_A2	DDR5_B1	DDR5_B2
1		V		V
2	V	V	V	V

The symbol V indicates the slot is populated.

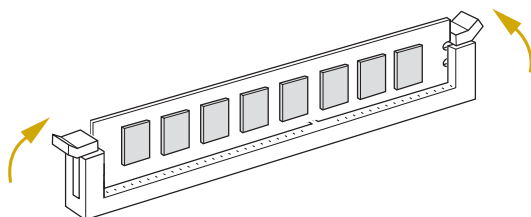
1



2



3



The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if forcing the DIMM into the slot at incorrect orientation.

2.6 Expansion Slots (PCI Express Slots)

There are 3 or 4 PCI Express slots on this motherboard.

PCIe slots:

PCIe4 (PCIe 4.0 x8 slot) is used for PCI Express x8 lane width cards.

PCIe5 (PCIe 4.0 x4 slot) is used for PCI Express x4 lane width cards. *(W680D4U-1L only)*

PCIe6 (PCIe 4.0 x16 slot) is used for PCI Express x16 lane width cards.

PCIe7 (PCIe 3.0 x1 slot) is used for PCI Express x1 lane width cards.

Slot	Generation	Mechanical	Electrical	Source
PCIe7	3.0	x1	x1	PCH
PCIe6	4.0	x16	x16	CPU
PCIe5 <i>(W680D4U-1L only)</i>	4.0	x4	x4	PCH
PCIe4	4.0	x8	x8	CPU

PCI Express Slot Configuration

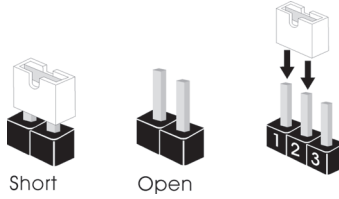
	PCIe 4	PCIe6
Single PCIe Card	x0	x16
Two PCIe Cards	x8	x8

Installing an expansion card

- Step 1. Before installing an expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before starting the installation.
- Step 2. Remove the system unit cover (if the motherboard is already installed in a chassis).
- Step 3. Remove the bracket facing the slot that intending to use. Keep the screws for later use.
- Step 4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
- Step 5. Fasten the card to the chassis with screws.
- Step 6. Replace the system cover.

2.7 Jumper Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is “Short”. If no jumper cap is placed on the pins, the jumper is “Open”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “Short” when a jumper cap is placed on these 2 pins.



ME Recovery Jumper
(3-pin ME_RECOVERY1)



Normal Mode (Default)



ME force update

CPU PECI Mode Jumper
(3-pin PECI1)



CPU PECI connected to
PCH



CPU PECI connected to
BMC (Default)

Security Override Jumper
(3-pin SEC_OR1)



Flash Descriptor Security
Override



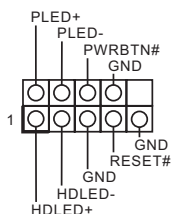
Not override (Default)

2.8 Onboard Headers and Connectors



Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage to the motherboard.

System Panel Header
(9-pin PANEL1)



Connect the power switch, reset switch and system status indicator on the chassis to this header according to the pin assignments. Particularly note the positive and negative pins before connecting the cables.



PWRBTN (Power Switch):

Connect to the power switch on the chassis front panel. Configure the way to turn off the system using the power switch.

RESET (Reset Switch):

Connect to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

PLED (System Power LED):

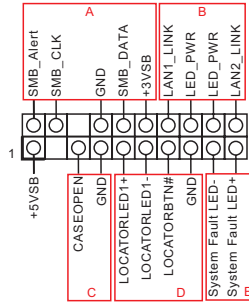
Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED is off when the system is in S4 sleep state or powered off (S5).

HDLED (Hard Drive Activity LED):

Connect to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting the chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

Auxiliary Panel Header (18-pin AUX PANEL1)



This header supports multiple functions on the front panel, including the front panel SMB, internet status indicator and chassis intrusion pin.



A. Front panel SMBus connecting pin (6-1 pin FPSMB)

This header allows user to connect SMBus (System Management Bus) equipment. It can be used for communication between peripheral equipment in the system, which has slower transmission rates, and power management equipment.

B. Internet status indicator (2-pin LAN1_LED, LAN2_LED)

These two 2-pin headers allow user to use the Gigabit internet indicator cable to connect to the LAN status indicator. When this indicator flickers, it means that the internet is properly connected.

C. Chassis intrusion pin (2-pin CHASSIS)

This header is provided for host computer chassis with chassis intrusion detection designs. In addition, it must also work with external detection equipment, such as a chassis intrusion detection sensor or a microswitch. When this function is activated, if any chassis component movement occurs, the sensor will immediately detect it and send a signal to this header, and the system will then record this chassis intrusion event. The default setting is set to the CASEOPEN and GND pin; this function is off.

D. Locator LED (4-pin LOCATOR)

This header is for the locator switch and LED on the front panel.

E. System Fault LED (2-pin SYSTEM STATUS)

This header is for the Fault LED on the system.

Serial ATA3 Connectors

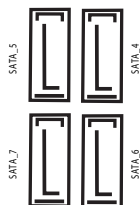
Right Angle:

(SATA_4) (Lower)

(SATA_5) (Upper)

(SATA_6) (Lower)

(SATA_7) (Upper)



These SATA3 connectors support SATA data cables for internal storage devices with up to 6.0 Gb/s data transfer rate.

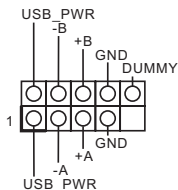
W680D4U Series only:

(SATA_6) (Lower)

(SATA_7) (Upper)

USB 2.0 Header

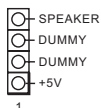
(9-pin USB_1_2)



There is one USB 2.0 header on this motherboard. Each USB 2.0 header can support two ports.

Chassis Speaker Header

(4-pin SPEAKER1)



Please connect the chassis speaker to this header.

System Fan

Headers

(4-pin FAN1)

(4-pin FAN2)

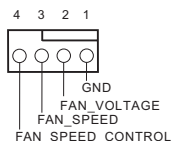
(4-pin FAN3)

(4-pin FAN4)

(4-pin FAN5)

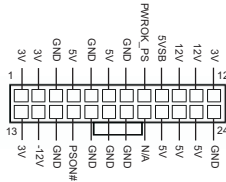
(4-pin FAN6)

(4-pin FAN7)



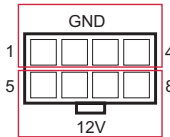
Please connect fan cables to the fan headers and match the black wire to the ground pin. All fans support Fan Control. The fan max. current is 4A and the max. power is 48Watts.

ATX Power Connector (24-pin ATXPWR1)



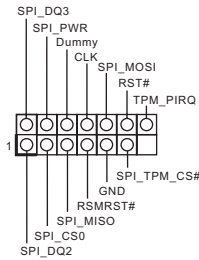
This motherboard provides a 24-pin ATX power connector. To use a 20-pin ATX power supply, please plug it along Pin 1 and Pin 13.

ATX 12V Power Connectors (8-pin ATX12V1) (8-pin ATX12V2)



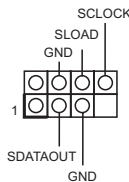
This motherboard provides two 8-pin ATX 12V power connectors.

SPI TPM Header (13-pin TPM_BIOS_PH1)



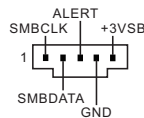
This connector supports SPI Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.

Serial General Purpose Input / Output Header (7-pin SATA_SGPIO1)



The header supports Serial Link interface for onboard SATA connections.

PSU SMBus (PSU_SMB1) (see p.7, No. 3)



PSU SMBus monitors the status of the power supply, fan and system temperature.

Non Maskable Interrupt
Button Header
(NMI_BTN1)



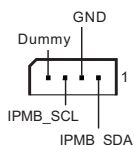
Please connect a NMI device to this header.

PWM Configuration
Header
(3-pin PWM_CFG1)



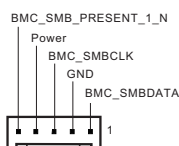
This header is used for PWM configurations.

Intelligent Platform
Management Bus Header
(4-pin IPMB_1)



This 4-pin connector is used to provide a cabled base-board or front panel connection for value added features and 3rd-party add-in cards, such as Emergency Management cards, that provide management features using the IPMB.

Baseboard Management
Controller SMBus Header
(5-pin BMC_SMB_1)



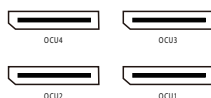
The header is used for the SMBUS devices.

Thermal Sensor Header
(3-pin TR1)



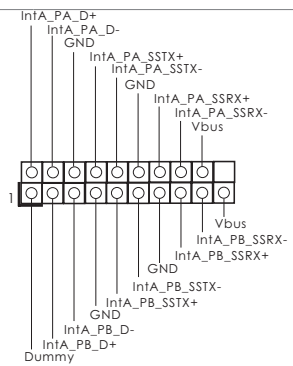
Please connect the thermal sensor cable to either pin 1-2 or pin 2-3 and the other end to the device to monitor its temperature.

OCuLink Connectors
(OCU1)
(OCU2)
(OCU3)
(OCU4)



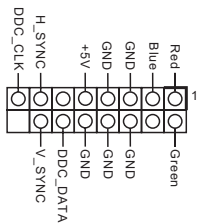
Please connect PCIE SSDs or OCulink-to-SATA x4 cable to the connectors.

USB 3.2 Gen1 Header
(19-pin USB3_3_4)



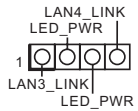
Besides two default USB 3.2 Gen1 ports on the I/O panel, there is one USB 3.2 Gen1 header on this motherboard. This USB 3.2 Gen1 header can support two USB 3.2 Gen1 ports.

Front VGA Header
(15-pin FRNT_VGA1)



Please connect either end of VGA_2X8 cable to VGA header.

Front LAN LED
Connector
(FRONT_LED_LAN1)



This 4-pin connector is used for the front LAN status indicator.

Clear CMOS Pad
(CLRMOS1)



CLRMOS1 allows user to clear the data in CMOS. To clear CMOS, take out the CMOS battery and short the Clear CMOS Pad.

2.9 Dr. Debug

Dr. Debug is used to provide code information, which makes troubleshooting even easier. Please see the diagrams below for reading the Dr. Debug codes.

Code	Description
0x10	PEI_CORE_STARTED
0x11	PEI_CAR_CPU_INIT
0x15	PEI_CAR_NB_INIT
0x19	PEI_CAR_SB_INIT
0x31	PEI_MEMORY_INSTALLED
0x32	PEI_CPU_INIT
0x33	PEI_CPU_CACHE_INIT
0x34	PEI_CPU_AP_INIT
0x35	PEI_CPU_BSP_SELECT
0x36	PEI_CPU_SMM_INIT
0x37	PEI_MEM_NB_INIT
0x3B	PEI_MEM_SB_INIT
0x4F	PEI_DXE_IPL_STARTED
0x60	DXE_CORE_STARTED
0x61	DXE_NVRAM_INIT
0x62	DXE_SBRUN_INIT

0x63	DXE_CPU_INIT
0x68	DXE_NB_HB_INIT
0x69	DXE_NB_INIT
0x6A	DXE_NB_SMM_INIT
0x70	DXE_SB_INIT
0x71	DXE_SB_SMM_INIT
0x72	DXE_SB_DEVICES_INIT
0x78	DXE_ACPI_INIT
0x79	DXE_CSM_INIT
0x90	DXE_BDS_STARTED
0x91	DXE_BDS_CONNECT_DRIVERS
0x92	DXE_PCI_BUS_BEGIN
0x93	DXE_PCI_BUS_HPC_INIT
0x94	DXE_PCI_BUS_ENUM
0x95	DXE_PCI_BUS_REQUEST_RESOURCES
0x96	DXE_PCI_BUS_ASSIGN_RESOURCES
0x97	DXE_CON_OUT_CONNECT
0x98	DXE_CON_IN_CONNECT

0x99 DXE_SIO_INIT

0x9A DXE_USB_BEGIN

0x9B DXE_USB_RESET

0x9C DXE_USB_DETECT

0x9D DXE_USB_ENABLE

0xA0 DXE_IDE_BEGIN

0xA1 DXE_IDE_RESET

0xA2 DXE_IDE_DETECT

0xA3 DXE_IDE_ENABLE

0xA4 DXE_SCSI_BEGIN

0xA5 DXE_SCSI_RESET

0xA6 DXE_SCSI_DETECT

0xA7 DXE_SCSI_ENABLE

0xA8 DXE_SETUP_VERIFYING_PASSWORD

0xA9 DXE_SETUP_START

0xAB DXE_SETUP_INPUT_WAIT

0xAD DXE_READY_TO_BOOT

0xAE DXE_LEGACY_BOOT

0xAF	DXE_EXIT_BOOT_SERVICES
0xB0	RT_SET_VIRTUAL_ADDRESS_MAP_BEGIN
0xB1	RT_SET_VIRTUAL_ADDRESS_MAP_END
0xB2	DXE_LEGACY_OPROM_INIT
0xB3	DXE_RESET_SYSTEM
0xB4	DXE_USB_HOTPLUG
0xB5	DXE_PCI_BUS_HOTPLUG
0xB6	DXE_NVRAM_CLEANUP
0xB7	DXE_CONFIGURATION_RESET
0xF0	PEI_RECOVERY_AUTO
0xF1	PEI_RECOVERY_USER
0xF2	PEI_RECOVERY_STARTED
0xF3	PEI_RECOVERY_CAPSULE_FOUND
0xF4	PEI_RECOVERY_CAPSULE_LOADED
0xE0	PEI_S3_STARTED
0xE1	PEI_S3_BOOT_SCRIPT
0xE2	PEI_S3_VIDEO_REPOST

0xE3 PEI_S3_OS_WAKE

0x50 PEI_MEMORY_INVALID_TYPE

0x53 PEI_MEMORY_NOT_DETECTED

0x55 PEI_MEMORY_NOT_INSTALLED

0x57 PEI_CPU_MISMATCH

0x58 PEI_CPU_SELF_TEST_FAILED

0x59 PEI_CPU_NO_MICROCODE

0x5A PEI_CPU_ERROR

0x5B PEI_RESET_NOT_AVAILABLE

0xD0 DXE_CPU_ERROR

0xD1 DXE_NB_ERROR

0xD2 DXE_SB_ERROR

0xD3 DXE_ARCH_PROTOCOL_NOT_AVAILABLE

0xD4 DXE_PCI_BUS_OUT_OF_RESOURCES

0xD5 DXE_LEGACY_OPROM_NO_SPACE

0xD6 DXE_NO_CON_OUT

0xD7 DXE_NO_CON_IN

0xD8	DXE_INVALID_PASSWORD
0xD9	DXE_BOOT_OPTION_LOAD_ERROR
0xDA	DXE_BOOT_OPTION_FAILED
0xDB	DXE_FLASH_UPDATE_FAILED
0xDC	DXE_RESET_NOT_AVAILABLE
0xE8	PEI_MEMORY_S3_RESUME_FAILED
0xE9	PEI_S3_RESUME_PPI_NOT_FOUND
0xEA	PEI_S3_BOOT_SCRIPT_ERROR
0xEB	PEI_S3_OS_WAKE_ERROR

2.10 Unit Identification purpose LED/Switch

Use the UID button to locate the server working on behind a rack of servers.

Unit Identification
purpose LED/Switch
(UID)

(W680D4U-1L not supported)



When the UID button on the front or rear panel is pressed, the front/rear UID blue LED indicator will be turned on. Press the UID button again to turn off the indicator.



Press and hold the UID button for 4 seconds, the BMC will trigger an external reset.

2.11 Dual LAN and Teaming Operation Guide (W680D4U-1L not supported)

Dual LAN with Teaming enabled on this motherboard allows two single connections to act as one single connection(s) for twice the transmission bandwidth, making data transmission more effective and improving the quality of transmission of distant images. Fault tolerance on the dual LAN network prevents network downtime by transferring the workload from a failed port to a working port.



The speed of transmission is subject to the actual network environment or status even with Teaming enabled.

Before setting up Teaming, please make sure whether the Switch (or Router) supports Teaming (IEEE 802.3ad Link Aggregation). Specify a preferred adapter in Intel PROSet. Under normal conditions, the Primary adapter handles all non-TCP/IP traffic. The Secondary adapter will receive fallback traffic if the primary fails. If the Preferred Primary adapter fails, but is later restored to an active status, control is automatically switched back to the Preferred Primary adapter.

Step 1

From **Device Manager**, open the properties of a team.

Step 2

Click the **Settings** tab.

Step 3

Click the **Modify Team** button.

Step 4

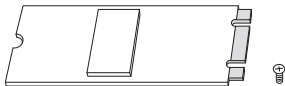
Select the adapter to be the primary adapter and click the **Set Primary** button.

If do not specify a preferred primary adapter, the software will choose an adapter of the highest capability (model and speed) to act as the default primary. If a failover occurs, another adapter becomes the primary. The adapter will, however, rejoin the team as a non-primary.

2.12 M.2 SSD Module Installation Guide (M2_1)

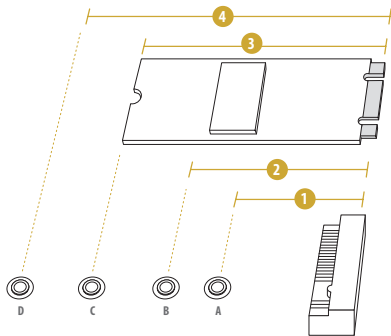
The Ultra M.2 Socket (M2_1, Key M) supports type2230/2242/2260/2280 M.2 PCI Express module up to Gen3 x4. *(W680D4U-1L not supported)*

Installing the M.2 SSD Module



Step 1

Prepare a M.2 SSD module and the screw.



Step 2

Depending on the PCB type and length of the M.2 SSD module, find the corresponding nut location to be used.

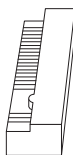
No.	1	2	3	4
Nut Location	A (NUT30_1)	B (NUT42_1)	C (NUT60_1)	D (NUT80_1)
PCB Length	3 cm	4.2 cm	6 cm	8 cm
Module Type	Type2230	Type2242	Type2260	Type2280

**Step 3**

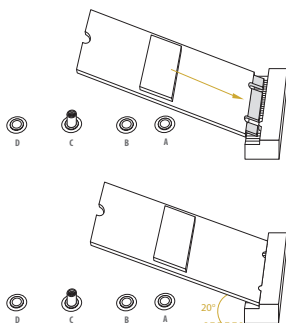
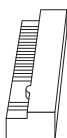
Move the standoff based on the module type and length.

The standoff is placed at the nut location D by default. Skip Step 3 and 4 and go straight to Step 5 if using the default nut.

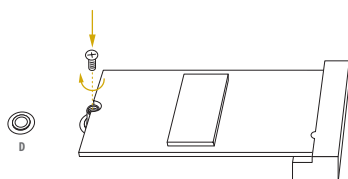
Otherwise, release the standoff by hand.

**Step 4**

Peel off the yellow protective film on the nut to be used. Hand tighten the standoff into the desired nut location on the motherboard.

**Step 5**

Align and gently insert the M.2 SSD module into the M.2 slot. Please be aware that the M.2 SSD module only fits in one orientation.

**Step 6**

Tighten the screw with a screwdriver to secure the module into place.

Please do not overtighten the screw as this might damage the module.

Chapter 3 UEFI Setup Utility

3.1 Introduction

This section explains how to use the UEFI SETUP UTILITY to configure the system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. Run the UEFI SETUP UTILITY when starting up the computer. Please press <F2> or during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY; otherwise, POST will continue with its test routines.

Restart the system by pressing <Ctrl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis to enter the UEFI SETUP UTILITY after POST. It may also restart by turning the system off and then back on.



Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what seeing on the screen.

3.1.1 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

Item	Description
Main	To set up the system time/date information
OC Tweaker <i>(W680D4U-1L not supported)</i>	For overclocking configurations
Advanced	To set up the advanced UEFI features
Security	To set up the security features
Boot	To set up the default system device to locate and load the Operating System
Server Mgmt <i>(W680D4U-1L not supported)</i>	To manage the server
Event Logs	For event log configuration
Exit	To exit the current screen or the UEFI SETUP UTILITY

Use <←> key or <→> key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen.

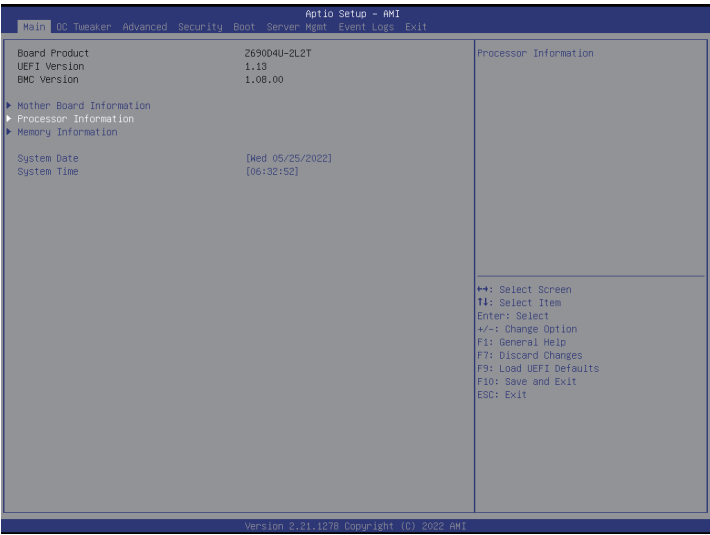
3.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Tab>	Switch to next function
<Enter>	To bring up the selected screen
<PGUP>	Go to the previous page
<PGDN>	Go to the next page
<HOME>	Go to the top of the screen
<END>	Go to the bottom of the screen
<F1>	To display the General Help Screen
<F7>	Discard changes and exit the UEFI SETUP UTILITY
<F9>	Load optimal default values for all the settings
<F10>	Save changes and exit the UEFI SETUP UTILITY
<F12>	Print screen
<ESC>	Jump to the Exit Screen or exit the current screen

3.2 Main Screen

Once entering the UEFI SETUP UTILITY, the Main screen will appear and display the system overview. The Main screen provides system overview information and allows user to set the system time and date.



Mother Board Information

Enter this item to view the motherboard information.

Processor Information

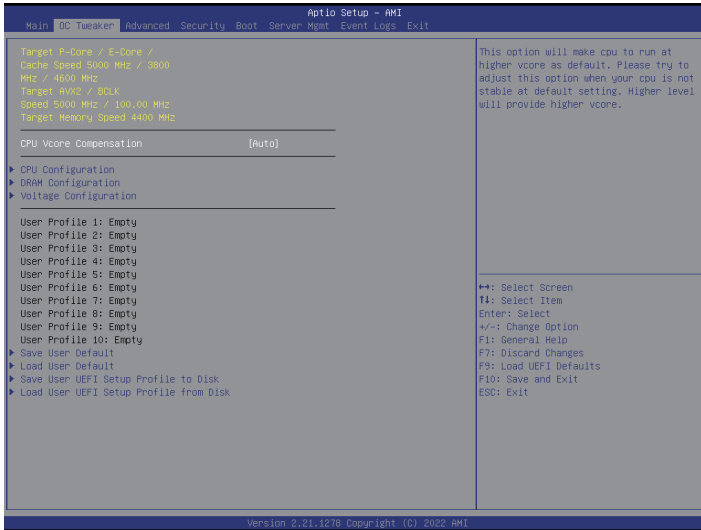
Enter this item to view the processor information.

Memory Information

Enter this item to view the memory information.

Note: The screenshots in this user manual are examples and for references only. The actual images may slightly vary depending on the model and the version.

3.3 OC Tweaker (W680D4U-1L not supported)



CPU Vcore Compensation

This option will make cpu to run at higher vcores as default. Please try to adjust this option when the cpu is not stable at default setting. Higher level will provide higher vcore.

Save User Default

Type a profile name and press enter to save the settings as user default.

Load User Default

Load previously saved user defaults.

Save User UEFI Setup Profile to Disk

It helps user to save current UEFI settings as an user profile to disk.

Load User UEFI Setup Profile from Disk

Load previous saved profile from the disk.

3.3.1 CPU Configuration



CPU Turbo Ratio Information

The CPU speed is determined by the CPU P-Core Ratio multiplied with the BCLK. Increasing the CPU P-Core Ratio will increase the internal CPU clock speed without affecting the clock speed of other components.

CPU P-Core Ratio

The CPU speed is determined by the CPU P-Core Ratio multiplied with the BCLK. Increasing the CPU P-Core Ratio will increase the internal CPU clock speed without affecting the clock speed of other components.

AVX2 Ratio Offset

AVX2 Ratio Offset specifies a negative offset from the CPU Ratio for AVX workloads. AVX is a more stressful workload that lower the AVX ratio to ensure maximum possible ratio for SSE workloads.

CPU E-Core Ratio

The E-Core speed is determined by the E-Core Ratio multiplied with the BCLK. Increasing the E-Core Ratio will increase the internal E-Core clock speed without affecting the clock speed of other components.

Flow Control EMS

Use this item to set the flow control to prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to restart the flow. Hardware flow uses two wires to send start/stop signals. The options include [None], [Hardware RTS/CTS], and [Software Xon/Xoff].

Data Bits EMS**Parity EMS****Stop Bits EMS**

3.4.16 Instant Flash

Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows user to update system UEFI without entering operating systems first like MS-DOS or Windows*. Just save the new UEFI file to the USB flash drive, floppy disk or hard drive and launch this tool, then update the UEFI only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If executing Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update the UEFI, and reboot the system after the UEFI update process is completed.

METW (Multiple Event Time Window)

Use this item to specify the number of minutes which must pass between duplicate log entries which utilize a multiple-event counter. The value ranges from 0 to 99 minutes.

View Smbios Event Log

Press <Enter> to view the Smbios Event Log records.



All values changed here do not take effect until computer is restarted.

Chapter 4 Software Support

After all the hardware has been installed, go to the official website at <http://www.ASRockRack.com> and make sure if there are any new updates of the BIOS / BMC firmware for the motherboard.

4.1 Download and Install Operating System

This motherboard supports various Microsoft® Windows® Server / Linux compliant operating systems. Please download the operating system from the OS manufacturer. Please refer to the OS documentation for more instructions.

**Please download the Intel® Rapid Storage Technology driver from the ASRock Rack's website (www.asrockrack.com) to the USB drive while installing OS in SATA RAID mode.*

4.2 Download and Install Software Drivers

This motherboard supports various Microsoft® Windows® compliant drivers. Please download the required drivers from our website at <http://www.ASRockRack.com>.

To download necessary drivers, go to the product page, click on the "Download" tab, choose the operating system, and select the driver to download.

Unable to save system setup configurations...

1. Verify if the battery on the motherboard provides ~3VDC. Install a new battery if it does not.
2. Confirm whether the power supply provides adequate and stable power.

Other problems...

1. Try searching keywords related to the problem on ASRock Rack's FAQ page:
<http://www.asrockrack.com/support>

5.2 Technical Support Procedures

If having to try the troubleshooting procedures mentioned above and the problems are still unsolved, please contact ASRock Rack's technical support with the following information:

1. Contact information
2. Model name, BIOS version and problem type.
3. System configuration.
4. Problem description.

Contact ASRock Rack's technical support at:
<http://www.asrockrack.com/support/tsd.asp>

5.3 Returning Merchandise for Service

For warranty service, the receipt or a copy of the invoice marked with the date of purchase is required. By calling the vendor or going to the RMA website (<http://event.asrockrack.com/tsd.asp>) to obtain a Returned Merchandise Authorization (RMA) number.

The RMA number should be displayed on the outside of the shipping carton which is mailed prepaid or hand-carried when returning the motherboard to the manufacturer. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

This warranty does not cover damages incurred in shipping or from failure due to alteration, misuse, abuse or improper maintenance of products.

Contact the distributor first for any product related problems during the warranty period.

Contact Information

Contact ASRock Rack or want to know more about ASRock Rack, you're welcome to visit ASRock Rack's website at <http://www.asrockrack.com>; or contact the dealer for further information. For technical questions, please submit a support request form at <https://event.asrockrack.com/tsd.asp>

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